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35. AMENDMENT TO AN ENDEMIC SPECIES *DALBERGIA TINNEVELLIENSIS* THOTH., FAMILY FABACEAE ON ITS REDISCOVERY FROM KALAKKAD-MUNDANTHURAI TIGER RESERVE, INDIA

Thothathri (1976) described *Dalbergia tinneveliense* sp. nov. from a fruiting specimen collected by Fischer in January 1917 (4045, CAL) from Mundanthurai, Tirunelveli district. This species is endemic to Tamil Nadu (Thothathri 1987). During the inventory in the buffer zone of the Kalakkad-Mundanthurai Tiger Reserve (KMTR), specimens of the species were collected in flowering and fruiting condition after a lapse of about 83 years. The description has been amended on the basis of these new collections. Illustration and other related details are provided to facilitate identification and conservation of the species.

*Dalbergia tinneveliense* Thoth. in Ceylon J. Sci. (Bio. Sci.) 12(1): 47. 1976

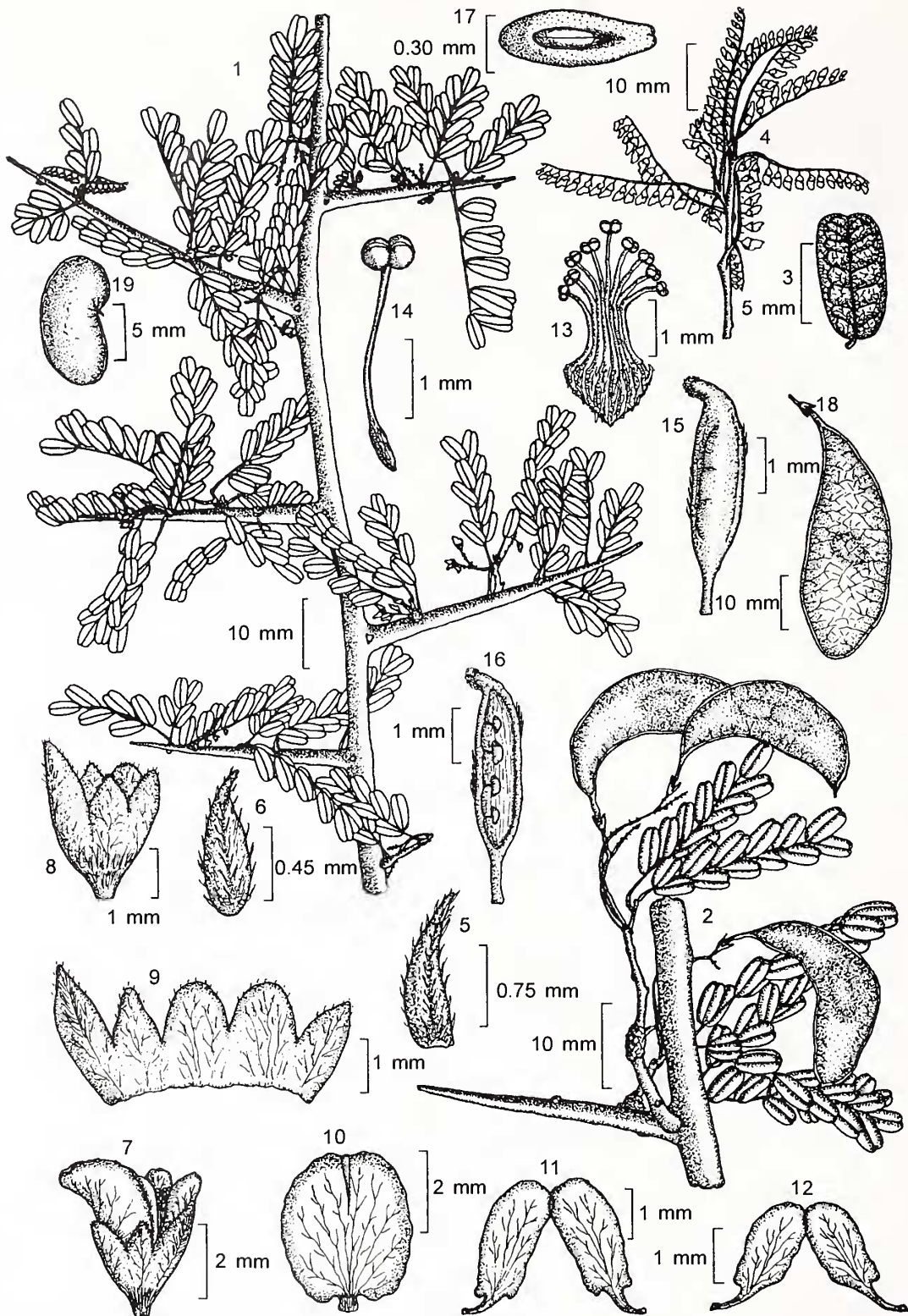
Shrub or tree, up to 5 m high; stems woody, lenticellate, glabrous; branchlets rigid, ending in thorns; thorns 0.6-1.7 x 0.15-0.2 cm, glabrous. Leaves alternate, imparipinnate, 2.5-12.6 x 1-4 cm, in short clusters, stipulate; stipules caducous; leaflets 7-17 in each pinna, obovate, 1-2.7 x 0.5-1.3 cm, acutely obtuse at base when young, cuneately obtuse at base when mature, entire at margin, obtusely retuse or emarginate at apex, subcoriaceous, pale green above, glaucous beneath; rachis puberulous; midvein prominent; lateral veins indistinct; petiolules c. 1.0 x 0.6 mm, puberulous. Inflorescence in axillary racemose panicles, 1.5-2.5 x 1.7-2 cm. Flowers bisexual, 5-merous, zygomorphic, 4-4.3 x 3.7-3.9 mm; bracts oblong-lanceolate, c. 1.5 x 0.3 mm, puberulous outside, glabrous inside; bracteoles lanceolate, c. 0.9 x 0.3 mm, puberulous outside, glabrous within; pedicels c. 1.2 x 0.3 mm, puberulous. Calyx campanulate, brown, connate at base, 5-toothed above, glabrous, ciliate above middle; tube c. 2.0 x 1.5 mm; teeth unequal, upper 4 smaller, lower one larger; upper ones ovate, c. 1.1 x 0.9 mm, entire at margin, 2 teeth obtuse at apex, 2 teeth acute at apex; larger one oblong-lanceolate, entire at margin, acute at apex, hairy on midrib outside, c. 1.3 x 0.4 mm. Petals 5, whitish yellow; standard orbicular, 3.5-4.1 x 3.2-3.8 mm, slightly auricled at base, entire at margin, retuse at apex; wings 2, oblong, 2.8-3 x 1-1.1 mm, adnate above, auricled at base, entire at margin, obtuse at apex; claw c. 0.5 x 0.2 mm; keels 2, oblong-obovate, 2.5-3 x 1-1.2 mm, obliquely auricled at base, entire at margin, adnate above, obtuse at apex;

claw 0.5-0.7 x 0.2-0.25 mm. Stamens 9, monadelphous, whitish yellow; staminal column free above, connate up to 1.2 x 1.2 mm; middle one longer, c. 1.5 x 0.2 mm; laterals 4, 2 each on either side, c. 1.2 x 0.2 mm; marginals 4, shorter than laterals, 2 each on either side, c. 1 x 0.2 mm; anthers basifixed, rectangular in shape, c. 0.25 x 0.5 mm, transverse. Ovary brown, stipitate, oblong, c. 3.25 x 1 mm; stipe c. 1 x 0.4 mm; ovules 4; style c. 0.35 x 0.25 mm; stigma terminal. Pod greenish-pale brown, indehiscent, flat, oblong-elliptic, 3.6-5.9 x 1.2-1.7 cm, acutely cuneate at base, entire and ribbed at margin, obtusely acute and rarely mucronate at apex, faintly reticulate, glabrous, 1- or 2-seeded, stipitate; stipe 2-5.2 x 0.4-0.8 mm. Seeds 1 or 2, attached marginally, pale to dark brown when mature, reniform, 12.5-12.8 x 6.6-6.9 mm.

The distinguishing features between *Dalbergia coromandeliana* Prain and *D. tinneveliense* Thoth. are given in Table 1.

**Specimens examined:** India, Tamil Nadu, Tirunelveli district, Kalakkad-Mundanthurai Tiger Reserve (KMTR): Ambasamudram Range, Singampatti beat, c. 250 m: 9.iii.2001, M.B. Viswanathan and S. Ramakrishnan 10336 & 10384; 10.iii.2001, M.B. Viswanathan and S. Ramakrishnan 10430; 15.iii.2001, M.B. Viswanathan and S. Ramakrishnan 10459; 16.iii.2001, M.B. Viswanathan and S. Ramakrishnan 10514; 17.iii.2001, M.B. Viswanathan and S. Ramakrishnan 10569; 19.iii.2001, M.B. Viswanathan and S. Ramakrishnan 10589; 3.iv.2001, M.B. Viswanathan and M. Venkatesan 12470; 8.v.2001, M.B. Viswanathan and M. Venkatesan 13540; Kadayam Range, Ambur beat: c. 240 m: 24.iv.2001, M.B. Viswanathan and S. Ramakrishnan 13105; Kalakkad Range, Kalakkad beat, c. 300 m: 9.iii.2001, M.B. Viswanathan and B. Jeyasuresh 10055 & 10079; 18.iii.2001, M.B. Viswanathan and B. Jeyasuresh 10087; 21.iii.2001, M.B. Viswanathan and B. Jeyasuresh 10726; 8.iv.2001, M.B. Viswanathan and B. Jeyasuresh 10769; Papanasam Range, Aladiyur beat, c. 200 m: 16.iii.2001, M.B. Viswanathan and N. Andal 10692.

**Habitat:** Southern tropical thorn forest with trees of *Allophylus serratus*, *Grewia rhamnifolia*, *Sapindus*



Figs. 1-19: *Dalbergia tinneveliense*: 1. A flowering twig; 2. A fruiting twig; 3. Leaflet; 4. Inflorescence; 5. Bract; 6. Bracteole; 7. Flower; 8. Clayx; 9. Calyx split open; 10. Standard; 11. Wings; 12. Keels; 13. Staminal column; 14. Stamen; 15. Ovary; 16. L.S. of Ovary; 17. C.S. of Ovary; 18. Pod; and 19. Seed

*emarginatus* and *Zizyphus xylopyrus*, shrubs like *Canthium parviflorum*, *Capparis grandiflora*, *Dichrostachys cinerea*, *Osyris quadripartita*, *Securinega leucopyrus* and *Zizyphus oenoplia*, herbs such as *Adiantum incisum*, *Aristida setacea*, *Justicia*

*glauca*, *Barleria prionitis*, *Boerhavia diffusa*, *Commelina benghalensis*, *C. longifolia*, *Cyperus kyllinga*, *Digitaria setigera*, *Evolvulus alsinoides*, *Malvastrum coromandelianum*, *Mollugo pentaphylla* and *Orthosiphon thymiflorus*, and climbers *Argyrea*

**Table 1:** Distinguishing features between *Dalbergia coromandeliana* and *D. tinneveliensi*s

Characters	<i>D. coromandeliana</i> Prain	<i>D. tinneveliensi</i> s Thoth.
Habit	Shrub	Shrub or Tree
Lenticels	Absent	Present
Leaves	4-9 cm long, on tubercles	3-12.6 cm long, in clusters
Leaflets	7-11, rarely up to 13, elliptic or cuneate-oblong, 0.6-0.9 cm long, rounded to cuneate at base, obtuse at apex	7-17, obovate, 1-2.7 cm long, acutely obtuse or cuneately obtuse at base, obtusely retuse or emarginate at apex
Petiolules	c. 0.5 mm long	c. 1 mm long
Inflorescence	Cymose panicles, 2.0-3.5 cm long	Racemose panicles, 1.5-2.5 cm long
Flowers	White to yellow	Whitish yellow
Bracts	Lanceolate	Oblong-lanceolate
Bracteoles	Ovate	Lanceolate
Pedicels	1.5-2 mm long	1-1.2 mm long
Upper 4 calyx lobes	Obtuse at apex, glabrous	2 lobes obtuse and 2 lobes acute at apex, ciliate above middle
Lower calyx lobe	Lanceolate, glabrous	Oblong-lanceolate, ciliate above middle
Standard	Ovate-orbicular to obovate, retuse to emarginate at apex	Orbicular, retuse at apex
Keel	Oblong	Oblong-obovate
Ovary	2-2.5 mm long, glabrous on ventral suture	4.5-5 mm long, puberulous on upper part of ventral suture
Ovules	2-3	4
Pod	Ovate-oblong, 1.7-3.8 cm long, narrowed at base, subacute to acute at apex	Oblong-elliptic, 3.6-5.9 cm long, acutely cuneate at base, obtusely acute and rarely mucronate at apex
Reticulation against seed portion	Distinct	Faint
Seeds	1	1, rarely 2

*hirsuta*, *Cocculus hirsutus* and *Jasminum angustifolium* var. *sessiliflorum*. In some areas, thickets formed by this species can be seen with sporadic presence of the parasitic *Dendrophthoe falcata*, Family Loranthaceae, on its branches.

**Note:** Thothathri (1976) opined that branchlets have a tendency to form axillary thorns, whereas all the specimens examined by us had the branchlets ends transformed into thorns.

#### ACKNOWLEDGEMENTS

The first author thanks the Forest Department of Tamil Nadu for funding under FREEP of the World Bank. Authors S.R., B.J., N.A., and M.V. are grateful for Junior Research Fellowships. All authors thank Dr. Sukhdev Thakur I.F.S., Chief Wildlife Warden, Chennai, Dr. V.K. Melkani I.F.S., Field Director and Conservator of Forests and Mr. Sugato Dutt I.F.S., Eco-

development Officer, Project Tiger, Kalakkad-Mundanthurai Tiger Reserve, Tirunelveli, for permission to collect plant specimens for authenticity and Messrs M. Muthuramakrishnan, K. Manikumar, G. Ramesh Babu and C. Vanarajan for cooperation in the field, Mr. S.S. Mariappan for diagram and Mr. S.H. Ramkumar for technical assistance.

June 18, 2002

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## 36. TWO DISTRIBUTIONAL RECORDS OF CAESALPINIACEAE FOR TAMIL NADU

During a botanical exploration on Tirunelveli hills and the adjoining regions, the authors collected interesting specimens of genus *Caesalpinia* L. and *Cassia* L. (Caesalpinaceae).

Study of the literature confirmed the specimens as *Caesalpinia major* (Medik.) Dandy & Exell and *Cassia sericea* Sw. The identification was confirmed by the Botanical Survey of India, Coimbatore. So far, they are not recorded from Tamil Nadu, so this constitutes a first record for the state. The nomenclature, diagnostic features, phenology, collection site, field numbers and distribution of the taxa have been provided. The voucher specimens have been deposited in St. Xavier's College Herbarium (XCH), St. Xavier's College, Palayamkottai.

*Caesalpinia major* (Medik) Dandy & Exell, J. Bot. 76.180.1938; Fosberg, Taxon 22: 162.1793; Halltink, Reinwardtia 9:39. 1974; Verdecourt, Man. New Guinea Legum. 26.1979; Rudd in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon. 7:49.1991. Bennet, Nam. Cha. Flow. Pl. India and Adj. Regions, 88. 1987. *Guilandina bonduc* L. Sp. Pl. ed. 2, 1: 545. 1762, Pro parte non, L., 1753. *Bonduc majus* Medik., Theod. Spec. 43, t.3, Sup. 1786, excl. syn. L. Type: *Frutex globulorum* Rumph., Herb. Amboin. 5:89, t.48. 1747. *Caesalpinia bonduc* sensu auct. Roxb. Fl. India 2: 362. 1832, non *Guilandina bonduc* L. 1753; Baker in Hook. f., Fl. Brit. India 2: 255. 1878; *Guilandina major* (DC.) Small, Fl. Southeast U.S. 591, 1331. 1903; Skeels, Science, New Ser. 37: 922. 1913. *Caesalpinia globurum* (sic) Bakh. f. & Van Royen, Blumea 12: 62. 1963; Backer & Bakh. f., Fl. Java 1: 545. 1963. *C. jayabo* Maza. ex Merr. In Interp. Herb. Amb. 261; Gamble, Fl. Pres. Madras 1: 394. 1997. (reprint).

Armed stragglers; branchlets pubescent, recurved prickles. Leaves alternate, imparipinnate; leaflets 6-8 pairs, opposite, elliptic-ovate, 6-11 x 3.5 cm, membranous, glossy, glabrous except midrib, sub-sessile. Flowers yellow in axillary simple/rarely branched racemes. Calyx gibbous, brown. Ovules 2-4, parietal. Style included. Pod obovoid, prickled, beaked at apex. Seeds 1-3.

**Fl. & Fr:** August-November.

**Specimens Examined:** Tamil Nadu, Tirunelveli district, Karayar, Manickam, 16910, 17153 (XCH).

**Remarks:** Occasionally found in the moist deciduous forests.

**Distribution:** India (Tamil Nadu, Kerala, Karnataka, Andhra Pradesh and Maharashtra), Sri Lanka, Malay Islands, Polynesia, West Indies.

*Cassia sericea* Sw., Fl. Ind. Occ. 2(1): 274.1798; Griseb. Fl. Brit. W. Indies. Ib.3: 209.1860; Singh, Bull. Bot. Surv. India 21: 203.1981; Saldanha, Fl. Karnataka 1: 386.1984.

Subshrub to 1 m; branchlets pubescent. Leaves alternate, paripinnate; leaflets 3-4 pairs, ovate-oblong, 2-4 x 1-2.5 cm, pubescent, apex apiculate. Flowers yellow, in axillary short racemes. Sepals free, obovate. Antheriferous stamens 7. Pod flat, 4 cm long. Seeds 7-9.

**Fl. & Fr:** November-January.

**Specimens Examined:** Tamil Nadu, Tirunelveli district, Palayamkottai, near N.G.O. 'B' Colony, Murugan 20495 (XCH)

**Remarks:** Occasionally found along the roadsides.

**Distribution:** Native of tropical South America, naturalising in Tamil Nadu, Karnataka and Maharashtra states of India.

## ACKNOWLEDGEMENTS

We thank the University Grants Commission, India for financial assistance, the Chief Conservator of Forests, Chennai for permission to undertake field studies and Dr. V. Chelladurai and Dr. R. Gopalan for encouragement.

November 15, 2001

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